

Report By:

National TAB
1329 E. KEMPER ROAD
SUITE 4210
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Report: TAB REPORT
Function: Test, Adjust, & Balance
Date: 10/30/2024
Completed By: National TAB

PROJECT

10-14-24 WALGREENS #9983
BLOOMINGTON, IL (REACTIVE)

1408 N MAIN ST

BLOOMINGTON, IL 61701

Client

Walgreens
200 WILMOT RD

DEERFIELD, IL 60015

National TAB

Project: 10-14-24 WALGREENS #9983 BLOOMINGTON, IL (REACTIVE)

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Project Summary

The summary below provides a quick understanding of our scope of work and general testing procedures. Enclosed in the report is further detail about your building performance including recommendations, asset data, and pictures. Our focus is to work with the trades to remedy any issues or deficiencies during the actual field balancing and not after the balancing has occurred to achieve a positive environment and outcome. The level of success is determined by the availability of the trades, possible parts needed, or time constraints.

Commissioning Activities

Equipment was inspected to ensure that the installation meets Walgreens requirements. Control and equipment setpoints were checked and after balancing was completed performance of each unit was verified. The full list of items that were verified along with any that failed are contained in the checklists in this report.

RTU's (Roof Top Units) w/ Diffusers

Each of the RTU's were measured at their terminal devices or via traverse to establish a total flow for that unit. Each RTU was adjusted to within tolerance per Walgreens standards. Each outlet was then adjusted to within tolerance. Outside air was measured by reading the intake air opening with a velocity grid and multiplying by the free area. The outside air damper was adjusted until the airflow was within the design requirements. Any equipment that fell outside of that tolerance is noted throughout the report.

General Exhaust Fans w/ Grilles

The general exhaust fans were measured by reading each air device with a flow hood. The total airflow for each fan is equivalent to the sum of these readings. Fan speed was then adjusted so that the airflow was within tolerance. Each terminal device was balanced to within tolerance of the design volume using the installed volume dampers. Any equipment that fell outside of this tolerance is noted throughout the report.

Issue List

- Damper accessibility in retail area
- EF-2 Vibration
- RTU-1 Alarms
- RTU-3 missing insulation on blower panel
- RTU-3 missing OA filter
- RTU-4 Condensate connections



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Project Issue Information

Issue Name : Damper accessibility in retail area
Description : Dampers in the retail area were not all accessible for adjustment. The RTU's that served those areas had to be balanced for total flow.
Created By : National TAB **Assigned To :** National TAB - Will Turnbough
Status : Open
Priority : Low **Asset Tag :**
Originated Date : 10/30/2024 - Will Turnbough - National TAB



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Project Issue Information

Issue Name : EF-2 Vibration

Description : EF-2 is vibrating and making noise. It is only audible from the roof. The fan vibrates unless set to minimum or maximum speed. It had to be set to 50% speed to achieve design airflow.

Created By : National TAB **Assigned To :** National TAB - Will Turnbough

Status : Open

Priority : Low **Asset Tag :** EF2

Originated Date : 10/30/2024 - Will Turnbough - National TAB

Project Issue Response Details

- **10/30/2024 National TAB - Dylan Crisman**
 - Updated with Video
 1. [Open](#) IMG_5931.mp4
10/30/2024



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Project Issue Information

Issue Name : RTU-1 Alarms
Description : RTU-1 has 2 alarms showing 1."4 Stage Communication Failure" 2. "Using Return Instead of Space Temp"
Created By : National TAB **Assigned To :** National TAB - Dylan Crisman
Status : Open
Priority : High **Asset Tag :**
Originated Date : 10/14/2024 - Dylan Crisman - National TAB



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Project Issue Information

Issue Name : RTU-3 missing insulation on blower panel
Description : RTU-3 missing insulation on Blower panel door.
Created By : National TAB **Assigned To :** National TAB - Dylan Crisman
Status : Open
Priority : High **Asset Tag :**
Originated Date : 10/14/2024 - Dylan Crisman - National TAB

Project Issue File Details



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Project Issue Information

Issue Name : RTU-3 missing OA filter
Description : RTU-3 missing OA mesh filter. Recommend replacing with correct size Mesh Filter.
Created By : National TAB **Assigned To :** National TAB - Dylan Crisman
Status : Open
Priority : High **Asset Tag :**
Originated Date : 10/14/2024 - Dylan Crisman - National TAB

Project Issue File Details



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Project Issue Information

Issue Name : RTU-4 Condensate connections
Description : RTU-4 Condensate line is broken at 2 connections, recommend replacing piping and seal connections.
Created By : National TAB **Assigned To :** National TAB - Dylan Crisman
Status : Open
Priority : High **Asset Tag :**
Originated Date : 10/14/2024 - Dylan Crisman - National TAB

Project Issue File Details



10/14/2024



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AIR BALANCE SCHEDULE

UNIT	AREA SERVED	HVAC SUPPLY		HVAC RETURN		HVAC OUTDOOR		OA %		HOOD MAKE-UP		HOOD EXHAUST		GENERAL EXH.	
		DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL
RTU-1	RETAIL	3150	3387	2850	3099	300	288	9.5%	8.5%						
RTU-2	RETAIL	2100	2197	1725	1835	375	362	17.9%	16.5%						
RTU-3	RETAIL/EMPLOYEE	3570	3737	2940	3074	630	663	17.6%	17.7%						
RTU-4	PHARMACY	2000	2074	2000	2074	0	0	0.0%	0.0%						
RTU-5	STOCK	1260	1266	1081	1068	179	198	14.2%	15.6%						
RTU-6	PHOTO	1260	1300	1215	1222	45	78	3.6%	6.0%						
EF-1	RESTROOMS													550	576
EF-2	EMPLOYEE RR													450	458
TOTALS		13340	13961	11811	12372	1529	1589			0	0	0	0	1000	1034

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1529	1589
TOTAL EXHAUST	1000	1034
NET AIRFLOW	529	555

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H2O)
FRONT	0.0082
SIDE	
REAR	0.0031
AVERAGE	0.0057

FINAL CHECKS

- ACTUAL NET AIRFLOW COINCIDES WITH DESIGN:

- MEASURED PRESSURES COINCIDES WITH ACTUAL NET AIRFLOW:

- PRESSURE FALLS WITHIN IMC TOLERANCE OF +/-0.02" W.C.

NOTES:

CheckList List

- TECH - 01 RTU INSTALLATION CHECKLIST
- TECH - 02 EXHAUST FANS INSPECTIONS
- TECH - 03 START-UP CONTROLS PROGRAMMING
- TECH - 04 EMS/SENSOR VALIDATION
- TECH - 05 TAB CHECKLIST
- TECH - 06 FUNCTIONAL TESTS
- TECH - 07 TEMPERATURE SETPOINTS
- TECH - 08 ENTRANCE HEATERS



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CheckList Information

Name : TECH - 01 RTU INSTALLATION CHECKLIST **Status :** Not Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 10/14/2024 - Brianna Biggs - National TAB

CheckList Item Details

General / Exterior Inspections

Verify all required equipment has been replaced per TA and BOM. Pass

Comment:

All units are installed in the proper locations Pass

Comment:

Units are labeled correctly Pass

Comment:

Asset tag installed Pass

Comment:

Roof is clear of debris. Pass

Comment:

Maintenance access for all unit access panels is acceptable and panels open freely. Pass

Comment:

Cabinet and general installation is complete.

Pass

Comment:

Unit is secure to curb and level horizontally and vertically.

Pass

Comment:

Access doors close tightly with no leaks

Pass

Comment:

Condensate and gas piping is properly supported.

Pass

Comment:

RTU-4 two connections on condensate line are broken, issue created.

Costguard is installed per scope of work and piping unions are cemented.

Pass

Comment:

Additional Comments

Comment:

Interior Inspections

Fan rotation is correct

Pass

Comment:

Pulleys are correctly aligned and both motor and fan sheave pins are tightened in place.

Pass

Comment:

Return air and outside air dampers close tightly with no gaps

Pass

Comment:

RTU-5 dampers are misaligned one will close while the other stays cracked. Unable to get them both to close completely.

Cabinet and coils are not damaged and in like new condition.

Pass

Comment:

Inside of unit is clean and clear of debris.

Pass

Comment:

Validate condensate is piped to splash block, draing, or roof drain per code requirements	Pass
---	------

Comment:

Verify filters are installed, clean and of proper size. Verify there is no air by-pass around filters.	Pass
--	------

Comment:

Curb is sealed with no air leakage.	Pass
-------------------------------------	------

Comment:

Additional Comments:

Comment:

Fire/Smoke Alarm Systems

In duct smoke detectors are installed	Pass
---------------------------------------	------

Comment:

Fire alarm panel status (visual inspection where possible)

Comment:

Additional Comments:

Comment:

Electrical

Electrical wiring is complete with no visible damage	Pass
--	------

Comment:

Electrical connections are tight with sealtight around any unit penetrations.	Pass
---	------

Comment:

Disconnect switch is installed in accessible location near or on unit.	Pass
--	------

Comment:

Verify overcurrent protection is HACR type, installed and sized correctly and labeled in panel.

Pass

Comment:

Maintenance electrical outlet is installed and functional.

Pass

Comment:

Main distribution panel is labeled correctly.

Pass

Comment:

Unit ground wire is secured.

Pass

Comment:

Additional Comments:

Comment:



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CheckList Information

Name : TECH - 02 EXHAUST FANS INSPECTIONS **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 10/14/2024 - Brianna Biggs - National TAB

Completed Date : 10/16/2024 - Dylan Crisman - National TAB

CheckList Item Details

Fan rotation is correct Pass

Comment:

Pulleys are aligned and belts are tensioned properly

Comment:

NA/DD

Speed controller installed and functional (direct drive)

Comment:

Yes

Fan is secured to the curb Pass

Comment:

Back draft damper is installed and functional Pass

Comment:



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No exterior damage to the fan

Pass

Comment:

No unusual noise or vibration

Pass

Comment:

EF-2 has vibration once setpoint was changed. Vibration clears up when at max or minimum setpoint. Currently set at 50%

Controls are functional

Pass

Comment:

Additional Comments:

Comment:



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CheckList Information

Name : TECH - 03 START-UP CONTROLS PROGRAMMING **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 10/14/2024 - Brianna Biggs - National TAB

Completed Date : 10/16/2024 - Dylan Crisman - National TAB

CheckList Item Details

Programming: SE 3.3, 3.4, 4.0

Controller-Network-Address: RTU number + 3 Pass

Comment:

Controller-Network-FCBusMode = Wired Field Bus Pass

Comment:

Controller-Network-BaudRate = Auto Pass

Comment:

Controller-Network-Device ID = RTU number + 3 Pass

Comment:

Details-Occ-OffDurUnocc = No Pass

Comment:

Details-Clg-Setup-Clg-En = Yes

Pass

Comment:

Details-Clg-Setup-ClgAdapTunEn = Yes

Pass

Comment:

Details-Htg-Setup-Htg-En = Yes

Pass

Comment:

Details-Htg-Setup-#HtgStgs = 2 Stages

Pass

Comment:

Details-Htg-Setup-HtgAdapTunEn = Yes

Pass

Comment:

Details-Htg-Setup-#GasVlvs = 1 (Set to 0 for Hp and Elect Heat)

Pass

Comment:

Details-Fan-Setup-Fan Ctl-Type = No VFD select "Single Speed", W/VFD select "Fixed Variable"

Pass

Comment:

Details-Fan-Setup-FanOnOcc = Yes

Pass

Comment:

Details-Fan-Setup-FanOnDlyHeat = 30s (Set to 0 for HP or Electric Heat)

Pass

Comment:

Details-Fan-Setup-FanOnly-%Cmd = 50%

Pass

Comment:

Details-Fan-Setup-1ClgStg-%Cmd = 70%

Pass

Comment:

Details-Fan-Setup-2ClgStg-%Cmd = 100% (2stage Unit) or 80% (3 and 4 stage)

Pass

Comment:

Details-Fan-Setup-3ClStg-%Cmd = 100% (3 stage unit) or 90% (4 stage)

Pass

Comment:

Details-Fan-Setup-4ClStg-%Cmd = 100% (4 Stage unit)

Pass

Comment:

Details-Fan-Setup-1HtgStg-%Cmd = 100%

Pass

Comment:

Details-Fan-Setup-2HtgStg-%Cmd = 100%

Pass

Comment:

Details-Econ-Setup-Econ-En = Yes

Pass

Comment:

Details-Econ-Setup-Econ-MinPos = Set to minimum outside air requirements.

Pass

Comment:

Details-Econ-Setup-LowSpdFan-MinPos = Set minimum 1% above EconMinPos

Pass

Comment:

Details-Econ-Setup-FreeClg-Sel = Single Enthalpy

Pass

Comment:

Details-Econ-Setup-EconOAEth-Sp 4= 24 Btu/lb

Pass

Comment:

Details-Econ-Setup-Dvent-Mode = Enable

Pass

Comment:

Details-Econ-Setup-DventMaxEconPos = 50%

Pass

Comment:

Details-Econ-Setup-DventIAP-Sp = 1000

Pass

Comment:

Details-Econ-Setup-EconFltDetectEn = Enable

Pass

Comment:

Additional Comments:

Comment:

Non ZR Units only:

Details-HGR-Setup-HGR-En = No

N/A

Comment:

Details-HGR-Setup-HGRAlt-En = No

N/A

Comment:

Details - HGR-Setup-HGRUnocc-En = No

N/A

Comment:

Details-HGR-Setup-Mode = No

N/A

Comment:

Additional Comments:

Comment:

ZR Units - Reheat Units only:

Details-HGR-Setup-HGR-En = Yes

Comment:

Details-HGR-Setup-HGRAlt-En = Yes

Pass

Comment:

Details - HGR-Setup-HGRUnocc-En = Yes

Pass

Comment:

Details-HGR-Setup-Mode = No

Pass

Comment:

Additional Comments:

Comment:



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10-14-24 WALGREENS #9983 BLOOMINGTON, IL (REACTIVE)

CheckList Information

Name : TECH - 04 EMS/SENSOR VALIDATION **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 10/14/2024 - Brianna Biggs - National TAB

Completed Date : 10/16/2024 - Dylan Crisman - National TAB

CheckList Item Details

RTU supply air temp sensor location located per start-up binder. Pass

Comment:

RTU return air temp sensor location located per start-up binder. Pass

Comment:

RTU return air smoke detector (when applicable) is located per start-up binder. Pass

Comment:

Space temperature sensor has been replaced and location meets requirements. Pass

Comment:

Space humidity sensor has been replaced and location meets requirements. Pass

Comment:

Unit is being controlled by a space temperature sensor or thermostat Pass

Comment:

EMS has been connected and validated with TOC or Gridpoint. Screen shot is available.

Pass

Comment:

No splicing of EMS/Sensor/Thermostat wiring is visible

Pass

Comment:

(If Applicable) 2 Stage Thermostat to SE Board Control Wiring meets detail in start-up binder.

Comment:

Not applicable for existing units (Carrier) Correct for New (York) Unit

(If Applicable) 2 Stage Thermostat to 4 Stage Unit meets detail in start-up binder.

Comment:

Not applicable for existing units (Carrier) Correct for New (York) Unit

(If Applicable) 4 Stage Thermostat to 4 Stage Unit meets detail in start-up binder.

Comment:

Not applicable for existing units (Carrier) Correct for New (York) Unit

(If Applicable) 3 Stage Thermostat wiring meets detail in start-up binder.

Comment:

Not applicable for existing units (Carrier) Correct for New (York) Unit

(If Applicable) 3 Stage Thermostat with Humidity sensor wiring meets detail in start-up binder.

Comment:

Not applicable for existing units (Carrier) Correct for New (York) Unit

(If Applicable) EH Thermostat with SCR control wiring meets detail in start-up binder.

Comment:

Yes

Temperature setpoints are set for correction region and space (see ASHRAE / temperature setpoint chart in procedure)

Pass

Comment:

Additional Comments:

Comment:



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10-14-24 WALGREENS #9983 BLOOMINGTON, IL (REACTIVE)

CheckList Information

Name : TECH - 05 TAB CHECKLIST **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 10/14/2024 - Brianna Biggs - National TAB

Completed Date : 10/16/2024 - Dylan Crisman - National TAB

CheckList Item Details

Outside air damper set to minimum air flow requirement and damper position marked. Pass

Comment:

Total Supply, return, and outside air volumes meet design tolerances (+/-10%) Pass

Comment:

Enclosed area diffusers (Pharmacies, manager office, employee room, restrooms, electrical rooms) balanced within +/-10%? Fail

Comment:

Employee room, office and electrical room could not be balanced as dampers were above sales floor ceiling. Suspect damper is closed due to low airflow in these spaces for RTU-3.

Open area diffusers (Sales floor and stock room) balanced within +/-25% of design? Fail

Comment:

Unable to access dampers above ceiling in sales floor for RTU-1/RTU-3.

Store pressure meets tolerances (see formula in balance schedule). Make sure to account for existing exhaust fans airflows as shown on original drawings that are non-functioning. Pass

Comment:

Outside air and return air dampers modulate freely.

Pass

Comment:

Start-up report from the installing contractor is reviewed and all information is filled out.
All required measurements are within typical ranges.

Comment:

(If Applicable) VFD is set-up and operational. (N/A = not applicable)

Comment:

RTU-1: Yes. RTU-2,3,4,5,6: N/A

Verify amp draw of motor is within unit specification, not operating in overamped condition.

Pass

Comment:

Sales floor temperature and humidity measurement

Comment:

70.9F/26.2%RH

Pharmacy temperature and humidity measurement

Comment:

72.2F/26.3%RH

Stock Room temperature and humidity measurement

Comment:

72.3F/26.0%RH

Outdoor air temperature and humidity measurement

Comment:

55.5F/27.3%RH

Additional Comments:

Comment:

Comment:

Additional Comments:

Comment:

Heating Functional Test

Override the thermostat or sensor to put the unit into heating mode.

Pass

Comment:

Heat exchanger enables.

Pass

Comment:

If fan has VFD, the fan increases speed.

Pass

Comment:

Document the discharge air temperature.

Comment:

RTU-1 115F/13.6%RH RTU-2 97F/18.4%RH RTU-3 92F/19.8%RH RTU-4 95F/19.3%RH RTU-5 97F/18.6% RTU-6 91F/20.0%RH

After 10 minutes, Discharge air temperature is above 85 degrees.

Pass

Comment:

Heating mode is operational

Pass

Comment:

Additional Comments

Comment:

Dehumidification Functional Test

Override the humidistat to put the unit into dehumidification mode.

Pass

Comment:

Compressors enable.

Pass

Comment:

Hot Gas Reheat Valve opens

Pass

Comment:

If fan has VFD, the fan increases speed.

Pass

Comment:

Dehumidification Mode is operational. (Pass/Fail/NA)

Comment:

Pass

Additional Comments:

Comment:

Economizer Functional Test

Overwrite the humidistat to put the unit into economizer mode.

Pass

Comment:

Economizer modulates from minimum position to 100% open. (Pass/Fail/NA)

Comment:

Pass

Additional Comments:

Comment:



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CheckList Information

Name : TECH - 07 TEMPERATURE SETPOINTS **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 10/14/2024 - Brianna Biggs - National TAB

Completed Date : 10/14/2024 - Dylan Crisman - National TAB

CheckList Item Details

Temperature setpoints must be set using provided charts are based on state and space that each RTU serves. Confirm with controls company that these are set correctly

Pass

Comment:



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10-14-24 WALGREENS #9983 BLOOMINGTON, IL (REACTIVE)

CheckList Information

Name : TECH - 08 ENTRANCE HEATERS **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 10/14/2024 - Brianna Biggs - National TAB

Completed Date : 10/16/2024 - Dylan Crisman - National TAB

CheckList Item Details

Sensor is located within 15' of entrance area Pass

Comment:

Confirm proper operation of entrance heater and associated controls Pass

Comment:

Balance supply air quantity to manufacturer recommended supply airflow. Pass

Comment:

Confirm listed temperature rise and discharge air temperature based on approved BOM/submittal Pass

Comment:



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Project: 10-14-24 WALGREENS #9983 BLOOMINGTON, IL
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System/Unit: AHU/RTU

Asset: RTU1

AREA:

Unit Data		
	Design	Actual
MFG	CARRIER	YORK
Serial Num	-	N2M3000714
Model Num	48HJD008	ZT090N12R2B5GCE2R2
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	29x21
Num Final Filter 1	-	4
Final Filter Size 1	-	20x24x2
Num Final Filter 2	-	
Final Filter Size 2	-	

Motor Data		
	Design	Actual
Motor MFG	-	BALDOR-RELIANCE
Frame	-	56Hz
Horsepower	4.2	3.0
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	8.3

Drive Data	
	Actual
Motor Sheave Size	1VM50
Motor Bore Size	7/8"
Motor Sheave SetPt	5 TURNS OPEN
Fan Sheave Size	6.5"
Fan Sheave Bore	1"
Belt CL Distance	19.5"
Num of Belts	1
Belt Size	A54
Belt Alignment	VERIFIED

Test Data		
	Design	Actual
SF CFM	3150	3387
SF RPM	-	957
RA CFM	-	3099
OA CFM	-	288
RL Voltage	-	213.6/212.8/213.3
RL Amperage	-	6.6/6.3/6.8
SF Rotation	-	CCW
SF System SetPt	-	5 TURNS OPEN
RA Damper Position	-	86%
Min OA Damper Position	-	14%
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	27B

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.73"
Fan Suction SP	-	-0.89"
Fan Discharge SP	-	0.63"
Total ESP	0.75"	1.36"
Fan Total SP	-	1.52"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	YES

Unit Data - PHOTO LOG



IMG_5892_1099464010.j..

Completed By: Dylan Crisman on 10/16/2024

Notes:
Unable to get access to dampers above ceiling on sales floor. Balanced unit total airflow to design.

Written By: Dylan Crisman on 10/16/2024



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Project: 10-14-24 WALGREENS #9983 BLOOMINGTON, IL
(REACTIVE)

AHU/RTU



Diffuser Supply (GRD)

RTU1/

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	RETAIL	SAD	18X6	315	1.0	421	382	382	121.3
SGRD2	RETAIL	SAD	18X6	315	1.0	444	403	403	127.9
SGRD3	RETAIL		12"	630	1.0	546	496	496	78.7
SGRD4	RETAIL		14"	630	1.0	700	635	635	100.8
SGRD5	RETAIL		18X6	315	1.0	376	341	341	108.3
SGRD6	RETAIL		18X6	315	1.0	587	533	533	169.2
SGRD7	RETAIL		14"	630	1.0	658	597	597	94.8
Total				3150		3732	3387	3387	107.52%



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Project: 10-14-24 WALGREENS #9983 BLOOMINGTON, IL
(REACTIVE)



System/Unit: AHU/RTU

Asset: RTU2

AREA:

Unit Data		
	Design	Actual
MFG	CARRIER	CARRIER
Serial Num	-	3907650423
Model Num	48HJD006	48HJD006GWH-54DRQ
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	28x14
Num Final Filter 1	-	1
Final Filter Size 1	-	34x24
Num Final Filter 2	-	
Final Filter Size 2	-	

Motor Data		
	Design	Actual
Motor MFG	-	GE MOTORS
Frame	-	56Y
Horsepower	2.9	NL
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	7.50

Drive Data	
	Actual
Motor Sheave Size	4.75"
Motor Bore Size	1"
Motor Sheave SetPt	3 TURNS OPEN
Fan Sheave Size	4.5"
Fan Sheave Bore	5/8"
Belt CL Distance	14.5"
Num of Belts	1
Belt Size	AX40
Belt Alignment	VERIFIED

Test Data		
	Design	Actual
SF CFM	2100	2197
SF RPM	-	986
RA CFM	-	1835
OA CFM	-	362
RL Voltage	-	212.8/211.6/212.4
RL Amperage	-	5.6/5.2/5.8
SF Rotation	-	CW
SF System SetPt	-	3 TURNS OPEN
RA Damper Position	-	80%
Min OA Damper Position	-	20%
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	E

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.75"
Fan Suction SP	-	-1.26"
Fan Discharge SP	-	0.21"
Total ESP	0.75"	0.96"
Fan Total SP	-	1.47"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	YES

Unit Data - PHOTO LOG



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Completed By: Dylan Crisman on 10/16/2024



National TAB

Project: 10-14-24 WALGREENS #9983 BLOOMINGTON, IL
(REACTIVE)

AHU/RTU



Diffuser Supply (GRD)

RTU2/

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	RETAIL		14"	735	1.0	702	702	702	95.5
SGRD2	RETAIL		9"	315	1.0	341	341	341	108.3
SGRD3	RETAIL		9"	315	1.0	344	344	344	109.2
SGRD4	RETAIL		14"	735	1.0	810	810	810	110.2
Total				2100		2197	2197	2197	104.62%

Completed By: Dylan Crisman on 10/15/2024



National TAB

Project: 10-14-24 WALGREENS #9983 BLOOMINGTON, IL
(REACTIVE)



System/Unit: AHU/RTU

Asset: RTU3

AREA:

Unit Data		
	Design	Actual
MFG	CARRIER	CARRIER
Serial Num	-	4007G50640
Model Num	48HJD009	48HJD009W-55RRQ
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	0
OA Filter Size 1	-	35x19.5
Num Final Filter 1	-	2
Final Filter Size 1	-	40x19
Num Final Filter 2	-	
Final Filter Size 2	-	

Motor Data		
	Design	Actual
Motor MFG	-	GE MOTORS
Frame	-	56Y
Horsepower	2.9	NL
Motor Rpm	-	1725
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	7.50

Drive Data	
	Actual
Motor Sheave Size	5"
Motor Bore Size	1"
Motor Sheave SetPt	3 TURNS OPEN
Fan Sheave Size	7"
Fan Sheave Bore	1"
Belt CL Distance	17"
Num of Belts	1
Belt Size	AX48
Belt Alignment	VERIFIED

Test Data		
	Design	Actual
SF CFM	3570	3737
SF RPM	-	956
RA CFM	-	3074
OA CFM	-	663
RL Voltage	-	212.9/213.5/213.0
RL Amperage	-	6.5/6.1/6.2
SF Rotation	-	CW
SF System SetPt	-	3 TURNS OPEN
RA Damper Position	-	80%
Min OA Damper Position	-	20%
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	E

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.73"
Fan Suction SP	-	-0.98"
Fan Discharge SP	-	0.52"
Total ESP	-	1.25"
Fan Total SP	-	1.5"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	YES

Unit Data - PHOTO LOG



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National TAB

Project: 10-14-24 WALGREENS #9983 BLOOMINGTON, IL
(REACTIVE)



AHU/RTU

Diffuser Supply (GRD)

RTU3/

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	RETAIL		9"	315	1.0	486	456	456	144.8
SGRD2	RETAIL		12"	336	1.0	645	605	605	180.1
SGRD3	OFFICE		24X24	420	1.0	488	458	458	109.0
SGRD4	PASSAGE 2		6"	37	1.0	26	27	27	73.0
SGRD5	EMPLOYEE RM		12X12	383	1.0	68	63	63	16.4
SGRD6	ELEC/EQUIP RM		6X6	84	1.0	40	38	38	45.2
SGRD7	RETAIL		10"	320	1.0	487	457	457	142.8
SGRD8	RETAIL		10"	320	1.0	461	433	433	135.3
SGRD9	RETAIL		10"	320	1.0	467	438	438	136.9
SGRD10	RETAIL		10"	320	1.0	506	475	475	148.4
SGRD11	RETAIL		10"	305	1.0	120	113	113	37.0
SGRD12	RETAIL		10"	305	1.0	136	128	128	42.0
SGRD13	PASSAGE 3		8"	70	1.0	49	46	46	65.7
Total				3535		3979	3737	3737	105.71%

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National TAB

Project: 10-14-24 WALGREENS #9983 BLOOMINGTON, IL
(REACTIVE)



System/Unit: AHU/RTU

Asset: RTU4

AREA:

Unit Data		
	Design	Actual
MFG	CARRIER	CARRIER
Serial Num	-	3807020530
Model Num	48HJD006	48HJD006W-54DRQ
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	28x14
Num Final Filter 1	-	1
Final Filter Size 1	-	34x24
Num Final Filter 2	-	
Final Filter Size 2	-	

Test Data		
	Design	Actual
SF CFM	2100	2074
SF RPM	-	1260
RA CFM	2000	2074
OA CFM	0	0
RL Voltage	-	212.3/212.3/213.2
RL Amperage	-	4.5/4.9/4.6
SF Rotation	-	CW
SF System SetPt	-	0 TURNS OPEN
RA Damper Position	-	100%
Min OA Damper Position	-	0%
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	E

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	56Y
Horsepower	2.4	NL
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	5.2

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.82"
Fan Suction SP	-	-1.03"
Fan Discharge SP	-	0.45"
Total ESP	0.75	1.27"
Fan Total SP	-	1.48"

Drive Data	
	Actual
Motor Sheave Size	3"
Motor Bore Size	5/8"
Motor Sheave SetPt	3 TURNS OPEN
Fan Sheave Size	AFD44
Fan Sheave Bore	5/8"
Belt CL Distance	13.75"
Num of Belts	1
Belt Size	AX36
Belt Alignment	VERIFIED

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	YES

Unit Data - PHOTO LOG



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National TAB

Project: 10-14-24 WALGREENS #9983 BLOOMINGTON, IL
(REACTIVE)

AHU/RTU



Diffuser Supply (GRD)

RTU4/

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	PATIENT SEATING		10"	268	1.0	205	256	263	98.1
SGRD2	TRAINING RM		8"	215	1.0	176	220	214	99.5
SGRD3	MULTI-PURPOSE RM		8"	220	1.0	182	278	227	103.2
SGRD4	PHARMACY		10"	373	1.0	328	410	381	102.1
SGRD5	PHARMACY		10"	341	1.0	278	347	347	101.8
SGRD6	PHARMACY		10"	341	1.0	219	290	318	93.3
SGRD7	PHARMACY		10"	341	1.0	257	321	324	95.0
Total				2099		1645	2122	2074	98.81%

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National TAB

Project: 10-14-24 WALGREENS #9983 BLOOMINGTON, IL
(REACTIVE)



System/Unit: AHU/RTU

Asset: RTU5

AREA:

Unit Data		
	Design	Actual
MFG	CARRIER	CARRIER
Serial Num	-	4107G20524
Model Num	48HJE004	48HJE004W-54DRQ
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	28x14
Num Final Filter 1	-	1
Final Filter Size 1	-	34x24
Num Final Filter 2	-	
Final Filter Size 2	-	

Motor Data		
	Design	Actual
Motor MFG	-	GE MOTORS
Frame	-	NL
Horsepower	1.2	1.0
Motor Rpm	-	1620
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	4.90

Drive Data	
	Actual
Motor Sheave Size	3"
Motor Bore Size	5/8"
Motor Sheave SetPt	3 TURNS OPEN
Fan Sheave Size	AFD49
Fan Sheave Bore	5/8"
Belt CL Distance	13.25"
Num of Belts	1
Belt Size	AX36
Belt Alignment	VERIFIED

Test Data		
	Design	Actual
SF CFM	1260	1266
SF RPM	-	1024
RA CFM	-	1068
OA CFM	-	198
RL Voltage	-	213.7/212.6/213.1
RL Amperage	-	3.6/3.2/3.3
SF Rotation	-	CW
SF System SetPt	-	3 TURNS OPEN
RA Damper Position	-	90%
Min OA Damper Position	-	10%
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	E

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.68"
Fan Suction SP	-	-1.02"
Fan Discharge SP	-	0.38"
Total ESP	-	1.06"
Fan Total SP	-	1.40"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	YES

Unit Data - PHOTO LOG



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National TAB

Project: 10-14-24 WALGREENS #9983 BLOOMINGTON, IL
(REACTIVE)

AHU/RTU



Diffuser Supply (GRD)

RTU5/

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	GENERAL STOCK		10"	210	0.38	182	210	210	100.0
SGRD2	GENERAL STOCK		10"	210	0.38	174	208	208	99.0
SGRD3	GENERAL STOCK		10"	210	0.38	206	206	206	98.1
SGRD4	GENERAL STOCK		10"	210	0.38	232	219	219	104.3
SGRD5	GENERAL STOCK		10"	210	0.38	248	212	212	101.0
SGRD6	GENERAL STOCK		10"	210	0.38	243	211	211	100.5
Total				1260		1285	1266	1266	100.48%

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National TAB

Project: 10-14-24 WALGREENS #9983 BLOOMINGTON, IL
(REACTIVE)



System/Unit: AHU/RTU

Asset: RTU6

AREA:

Unit Data		
	Design	Actual
MFG	CARRIER	CARRIER
Serial Num	-	4107G30176
Model Num	48HJE004	48HJE004W-54DRQ
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	28x14
Num Final Filter 1	-	1
Final Filter Size 1	-	34x24
Num Final Filter 2	-	
Final Filter Size 2	-	

Motor Data		
	Design	Actual
Motor MFG	-	GE MOTORS
Frame	-	NL
Horsepower	1.2	1.0
Motor Rpm	-	1620
Phase	3	1
Rated Voltage	208	208
Rated Amperage	-	4.90

Drive Data	
	Actual
Motor Sheave Size	3"
Motor Bore Size	5/8"
Motor Sheave SetPt	3 TURNS OPEN
Fan Sheave Size	AFD49
Fan Sheave Bore	5/8"
Belt CL Distance	13.25"
Num of Belts	1
Belt Size	AX36
Belt Alignment	VERIFIED

Test Data		
	Design	Actual
SF CFM	1260	1300
SF RPM	-	918
RA CFM	-	1222
OA CFM	-	78
RL Voltage	-	211.9/212.0/212.1
RL Amperage	-	4.8/4.6/4.5
SF Rotation	-	CW
SF System SetPt	-	3 TURNS OPEN
RA Damper Position	-	95%
Min OA Damper Position	-	5%
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	E

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.48"
Fan Suction SP	-	-0.57"
Fan Discharge SP	-	0.25"
Total ESP	0.5"	0.73"
Fan Total SP	-	0.82"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	YES

Unit Data - PHOTO LOG



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National TAB

Project: 10-14-24 WALGREENS #9983 BLOOMINGTON, IL
(REACTIVE)

AHU/RTU



Diffuser Supply (GRD)

RTU6/

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	PHOTO		24X24	630	1.0	644	644	644	102.2
SGRD2	PHOTO		24X24	630	1.0	656	656	656	104.1
Total				1260		1300	1300	1300	103.17%

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National TAB

Project: 10-14-24 WALGREENS #9983 BLOOMINGTON, IL
(REACTIVE)



System/Unit: FAN - Exhaust

Asset: EF1

AREA:

Unit Data		
	Design	Actual
MFG	GREENHECK	PENNBARRY
Model Num	G-90-DGEX-QD-D	DX11Q
Serial Num	-	F230Z80305N
Type	DOWNBLAST	DOWNBLAST
Configuration	VERTICAL	VERTICAL

Test Data		
	Design	Actual
CFM	550	576
Fan RPM	1550	1294
Fan Rotation	-	CCW
Motor RPM	-	1294
System SetPt	-	75%
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	0.375"	0.43"
Fan Inlet SP	-	-0.43"
Fan Discharge SP	-	ATM

Motor Data		
	Design	Actual
Motor MFG	-	GENTEQ
Frame	-	NL
Horsepower	1/15	1/5
Motor Rpm	-	1725
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	3.0
Service Factor	-	1.15

Unit Data - PHOTO LOG



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National TAB

Project: 10-14-24 WALGREENS #9983 BLOOMINGTON, IL
(REACTIVE)



FAN - Exhaust

Diffuser Ret/Exh (GRD)

EF1/

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EGRD1	MENS RR		8"	250	1.0	266	266	266	106.4
EGRD2	WOMENS RR		8"	250	1.0	258	258	258	103.2
EGRD3	JANITORS CLOSET		6"	50	1.0	52	52	52	104.0
Total				550		576	576	576	104.73%

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National TAB

Project: 10-14-24 WALGREENS #9983 BLOOMINGTON, IL
(REACTIVE)



System/Unit: FAN - Exhaust

Asset: EF2

AREA:

Unit Data		
	Design	Actual
MFG	GREENHECK	PENNBARRY
Model Num	G-90-DGEX-QD-D	DX11Q
Serial Num	-	F230Z80298
Type	DOWNBLAST	DOWNBLAST
Configuration	VERTICAL	VERTICAL

Test Data		
	Design	Actual
CFM	450	458
Fan RPM	1550	862
Fan Rotation	-	CCW
Motor RPM	-	862
System SetPt	-	50%
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	0.375"	0.26"
Fan Inlet SP	-	-0.26"
Fan Discharge SP	-	ATM

Motor Data		
	Design	Actual
Motor MFG	-	GENTEQ
Frame	-	NL
Horsepower	1/15	1/5
Motor Rpm	-	1725
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	3.0
Service Factor	-	1.15

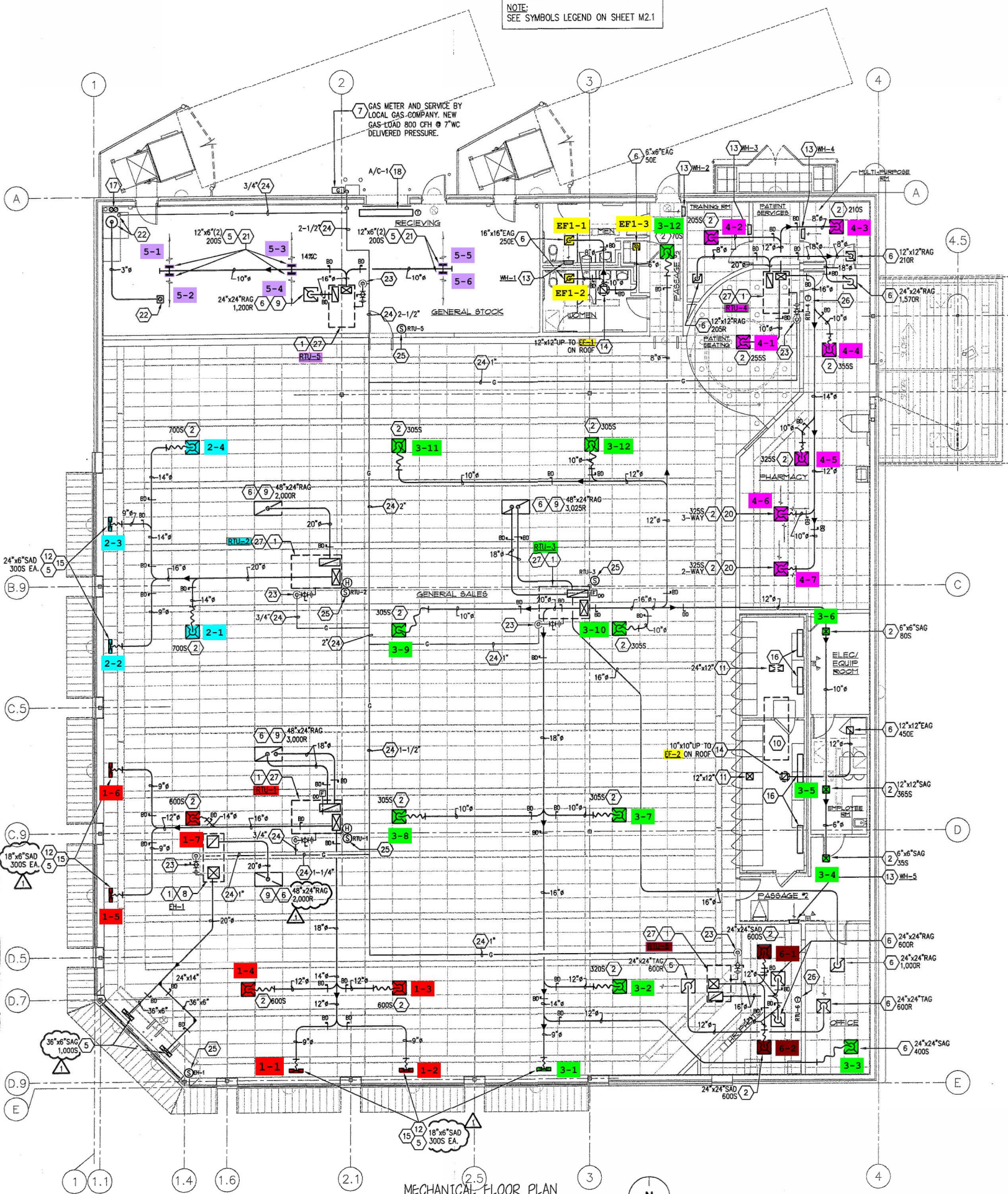
Unit Data - PHOTO LOG



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NOTE:
SEE SYMBOLS LEGEND ON SHEET M2.1



MECHANICAL FLOOR PLAN

SCALE: 1/8" = 1'-0"



Date: 10/30/2024

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